

We Claim:

1. A method of preparing a recombinant adenovirus (RAdEs) vaccine to protect against Japanese encephalitis virus (JEV) infection, wherein the said vaccine produces secretory envelop protein (Es) of JEV, said method comprising steps of:
 - a. digesting plasmid pMEs with restriction enzymes *Kpn* I and *Bam* HI to obtain cDNA encoding JEV proteins prM and Es,
 - b. ligating the cDNA to adenovirus shuttle plasmid pShuttle digested with restriction enzymes *Kpn* I and *Hind* III at the *Kpn* I end,
 - c. filling nucleotides at the free *Bam* HI and *Hind* III ends with T4 DNA polymerase to create blunt ends,
 - d. ligating the blunt ends together to yield shuttle plasmid pSEs with JEV cDNA encoding the proteins prM and Es,
 - e. digesting the shuttle plasmid pSEs with restriction enzymes *I-Ceu* I and *P1-Sce* I to obtain expression cassette containing the JEV cDNA together with the CMV promoter/enhancer and BGH polyadenylation signal,
 - f. ligating the digested shuttle plasmid with *I-Ceu* I and *P1-Sce* I digested adenovirus plasmid pAdeno-X to generate plasmid pAdEs containing Es expression cassette,
 - g. digesting the plasmid pAdEs with *Pac* I,
 - h. transfecting the monolayers HEK 293 cells with digested plasmid pAdEs for about one week, and
 - i. obtaining the recombinant virus RAdEs vaccine.
2. A method as claimed in claim 1, wherein the transfection is at about 37°C temperature.
3. A method as claimed in claim 1, wherein the JEV proteins are under the control of human CMV IE promoter/enhancer.
4. A recombinant adenovirus (RAdEs) vaccine, optionally along with pharmaceutically acceptable additives.
5. A vaccine as claimed in claim 4, wherein the vaccine produces secretory envelope protein of JEV.
6. A vaccine as claimed in claim 4, wherein the vaccine protects against Japanese encephalitis virus (JEV) infection.

7. A vaccine as claimed in claim 4, wherein the vaccine is effective by intramuscular route of administration.
8. A vaccine as claimed in claim 4, wherein the additives are selected from a group comprising alum, gelatin and thiomersal.
- 5 9. A plasmid pAdEs of SEQ ID No. 1.
10. Use of a pharmaceutically effective amount of recombinant virus RAdEs vaccine optionally along with additive(s) to the subject in need thereof for Japanese encephalitis virus (JEV) infection.
11. Use as claimed in claim 10, wherein the method shows 100% efficacy.
- 10 12. Use as claimed in claim 10, wherein the method helps protect subject against encephalitis.
13. Use as claimed in claim 10, wherein the subject is animal.
14. Use as claimed in claim 10, wherein the subject is a human being.
15. Use as claimed in claim 10, wherein the immunization activates both humoral and cell-mediated immune response.
- 15 16. Use as claimed in claim 10, wherein the humoral response to the vaccine comprises IgG1 type of antibody.
17. Use as claimed in claim 10, wherein the method leads to high amount of IFN-gamma secretion.
- 20 18. Use as claimed in claim 10, wherein immunization leads to moderate levels of IL-5 synthesis.
19. Use as claimed in claim 10, wherein increased amount of RAdEs leads to higher immune response.
20. Use as claimed in claim 10, wherein the method is more effective than the commercially available vaccines.
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